50150 BAW

Form C-104
Rev. 2/01

# CONSTRUCTION VALUE ENGINEERING CONCEPT PROPOSAL
# MISSOURI DEPARTMENT OF TRANSPORTATION

**Date** 04/29/2008

**Contract ID** 080329-X05 **Job No.** J0I0978B

**County** SCOTT/CAPE GIRARDEA **Route** I-55 **Original Bid Cost** $4,628,449.15

**Contractor** COLLINS & HERMANN, INC. **By** KEVIN HERMANN

**Designed By** **Phone** (314) 869-8000

VE # 08-31

1. **Description of existing requirements and proposed change(s). Advantages/Disadvantages**

   Requesting to switch from 15' post spacing @ $9.62/lf = $2,218,468.20
   to 20' post spacing @$8.87/lf = $2,045,510.70.

2. **Estimate of reduction in construction costs.** $172,957.50

3. **Prediction of any effects the proposed change(s) will have on other department costs, such as maintenance and operations.**

4. **Anticipated date for submittal of detailed change(s) of items required by Section 104.6 of the Specifications.**

   _____
   (date)

5. **Deadline for issuing a change order to obtain maximum cost reduction, noting the effect of contract completion time or delivery schedule.**

   _____ _____
   (date) (effect)

6. **Dates of any previous or concurrent submission of the same proposal.**

   _____
   (date and/or dates)

**Additional Comments:**

***** Portion Below This Line To Be Filled Out by MoDOT *****

**Comments:** Recommend approval of proposal based on concurance with approval from the attached e-mail

Brian Holt — Submitted By Resident Engineer — 4/30/08 — Date

**Comments:** I concur with the recommendation.

☒ **Approval Recommended**
☐ **Rejection Recommended**

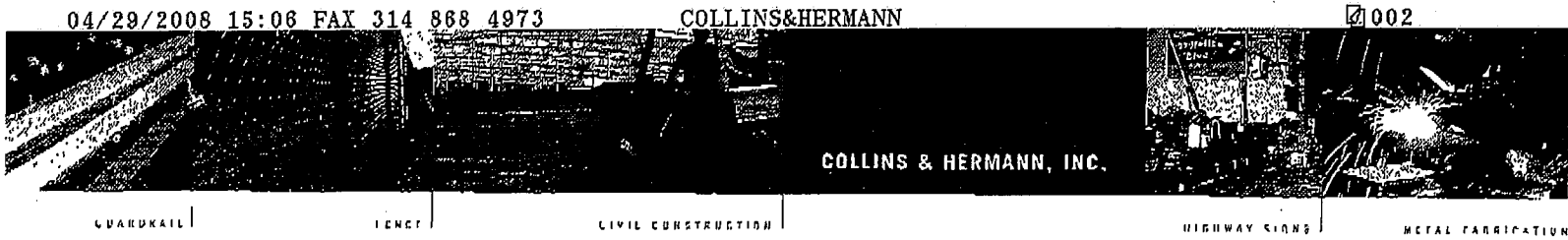
Mark Shelton by [illegible] — District Engineer — 4-30-08 — Date

**Comments:**

☒ **Approval**
☐ **Rejection**

David D. Gaines BAW — State Operations Engineer — 5-6-08 — Date

**Distribution:** Resident Engineer, District Operations Engineer, State Operations Engineer
*Value Engineering Administrator - *MoDOT, P.O. Box 270, Jefferson City, MO 65102




April 29, 2008

Brian Holt, Resident Engineer
**MISSOURI DEPT OF TRANSPORTATION**
2675 North Main
PO Box 160
Sikeston, MO 63801

**RE: JOB NO. J0I0978B**
**RTE. I-55**
**SCOTT & CAPE GIRARDEAU COUNTIES**
**CONTRACT ID 080328-X05**
**C&H JOB NO. 10-8761-K**

Dear Brian:

Please accept the following as a Conceptual VE Proposal for the above referenced project.

**Per Original Plan Quantity**

| | |
|---|---|
| 230,610 Misc. High-Tension Guard Cable (15' post spacing) @ $9.62/lf | $2,218,468.20 |
| **Subtotal** | **$2,218,468.20** |

**Per Proposed VE Plan Quantity**

| | |
|---|---|
| 230,610 Misc. High-Tension Guard Cable (20' post spacing) @ $8.87/lf | $2,045,510.70 |
| **Subtotal** | **$2,045,510.70** |
| **TOTAL SAVINGS** | **$ 172,957.50** |

Should you have any questions or concerns, please contact me directly at 314-568-4381.

Cordially,
**COLLINS & HERMANN, INC.**

Kevin B. Hermann
President

KBHama

RECEIVED
APR 29 2008
SIKESTON PROJECT OFFICE

COLLINS & HERMANN, INC.
www.collinsandhermann.com

St. Louis
1215 Dunn Road
PO Box 38901-0901
St. Louis, MO 63138
Phone 314.869.8000
Fax 314.869.8498

Kansas City
2366 State Line Road
Kansas City, KS 66103
Phone 913.621.3906
Fax 913.621.2233

Joseph G Jones /SC/MODOT
04/29/2008 02:50 PM

To David A Scrivens/D1/MODOT@MODOT, Perry J Allen/D4/MODOT@MODOT, Brian N Holt/D10/MODOT@MODOT, Andrew L
cc
bcc
Subject 20 ft. Post Spacing Documentation

History: This message has been replied to.

After further research and much debate, MoDOT decided to increase the maximum post spacing for high-tension, socketed cable barrier from 15 ft. to 20 ft.

The reasons are as follow:

- **Compatibility with Federal approvals**
  The FHWA, in a memorandum dated July 20, 2007, states,
  "The FHWA recommends that highway agencies specify the post spacing when cable barrier systems are specified. The conventional range for cable post spacing is 6.5 to 15'."

  Subsequent discussion with FHWA clarified that "conventional range" in no way represents an absolute limit. In fact, another FHWA Document states,
  "...the likelihood of passenger car underrides of **any cable system** may increase as the post spacing increases, particularly when the barrier is installed on non-level or slightly irregular terrain and the cables are not restrained from lifting at each post. Consequently, some transportation agencies have limited post spacing to approximately 6m (20 feet) for cable barriers."

- **Compatibility with existing product line**
  Each of the three most likely sources of proprietary cable barrier systems has a product that exhibits a dynamic deflection of less than 10 ft. at 20 ft. post spacing.

| Manufacturer | Post Spacing | Dynamic Deflection |
|---|---|---|
| Gibraltar | 20 ft. | 8 ft.-1 in. |
| Trinity | 20 ft. | 9 ft.- 4 in. |
| Brifen | 10 ft. | 7 ft. - 7 in. |

- **Excellent In-service performance**
  MoDOT has experienced excellent in-service performance from a sizeable installation of high tension barrier, on 4:1 slopes, with posts spaced at 20 ft. Furthermore, MoDOT's low-tension, generic system has proven numbers that indicate a success rate of 94% with posts spaced greater than 15 ft. apart.

- **Money saved with the same safety value delivered**
  A recent VE proposal to increase post spacing from 15 ft. to 20 ft. showed a savings of $0.75 per linear foot. That equates to about a 7% price reduction for the overall system.

This memo is to document the decision for some pending Value Engineering proposals; the policy change will have to be balloted through the normal process.

# VALUE ENGINEERING CHECK SHEET

## TYPE OF WORK

(Check one that applies)

- ☐ Bridge/Structure/Footings
- ☐ Drainage Structures (RCP, RCB, CMP's, ect.)
- ☐ TCP/MOT
- ☐ Paving (PCCP, ect.)
- ☐ Grading/MSE Walls
- ☐ Signal/Lighting/ITS
- X Misc. _Guard Cable_____

## SUMMARY OF PROPOSAL

(If needed, condense summary to a couple of lines)

This VE increases the post spacing of the guard cable from 15 to 20 feet. This is a 50/50 cost share.

## SCANNING OF DOCUMENT

If the proposal is large, please mark or make note, which pages need to be scanned into the database. If there are special instructions, make note of them here.

_____

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